

Coordinating Day-Ahead Power Prices Europe-Wide as of Next Year?

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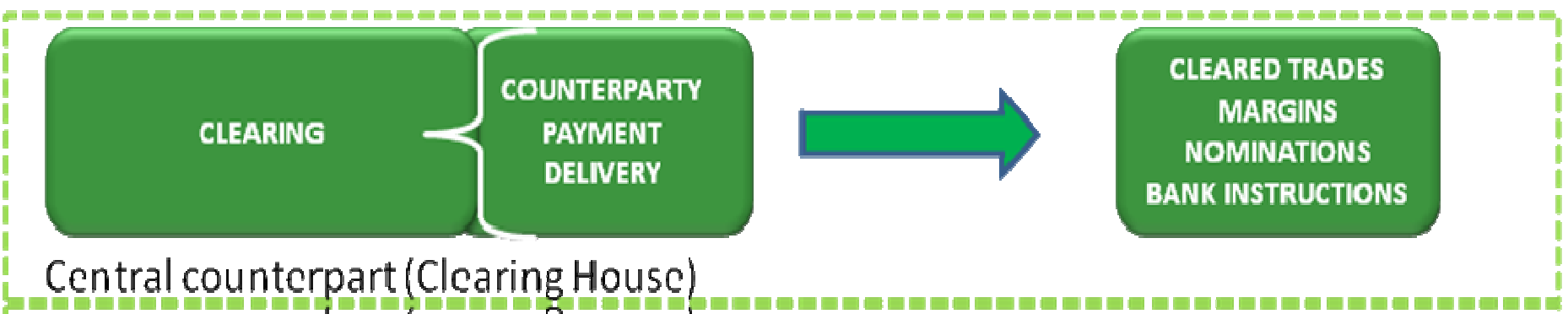
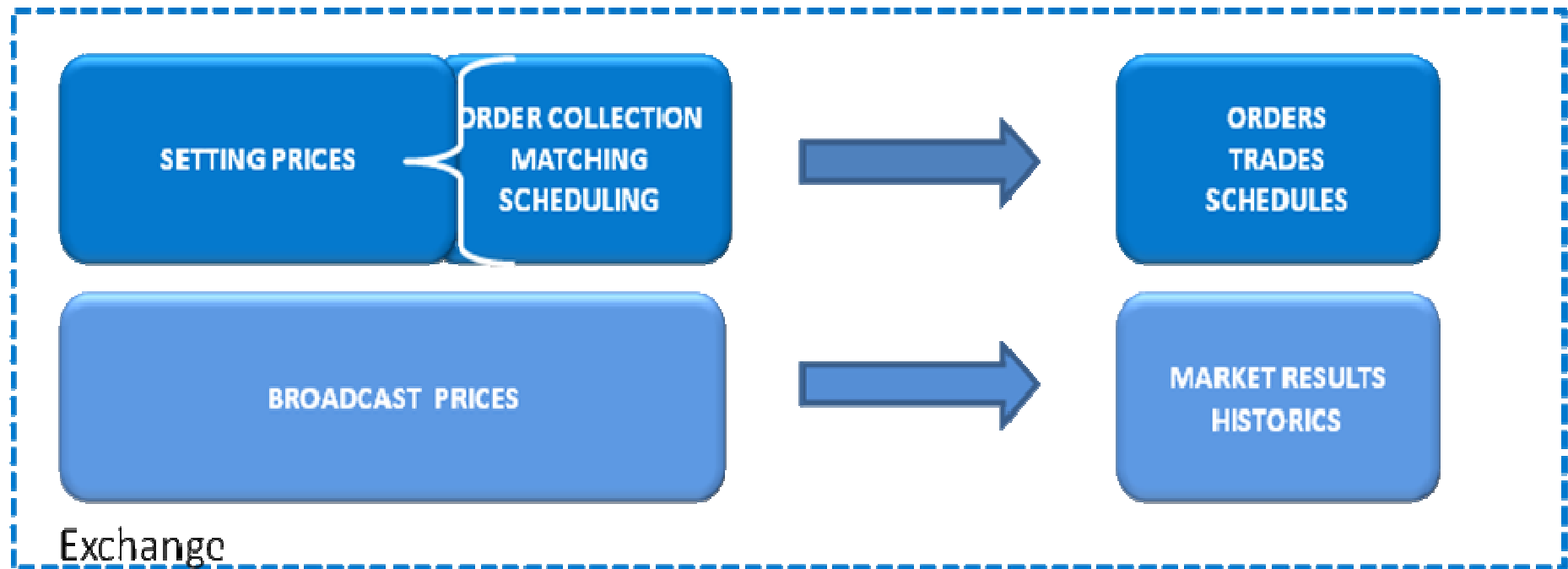
PX Functions in the Power Market

- ▶ A Power Exchange organizes the exchange of electricity in a standard, transparent and fair manner among its participants
- ▶ F1: Setting the prices
 - ▶ collecting the orders from the participants,
 - ▶ matching these orders to get the balance between the supply and the offer according to an algorithm
 - ▶ and attributing the executed quantities to each participant (schedules)
- ▶ F2: Broadcasting the prices which are used as references by many agents
- ▶ F3: Clearing
 - ▶ Payment to the sellers by the buyers through the central counterparty;
 - ▶ Delivery which results in nomination of the sales and purchases by the central counterparty to the TSO.

PX Functions in the Power Market

FUNCTIONS

OUTPUTS



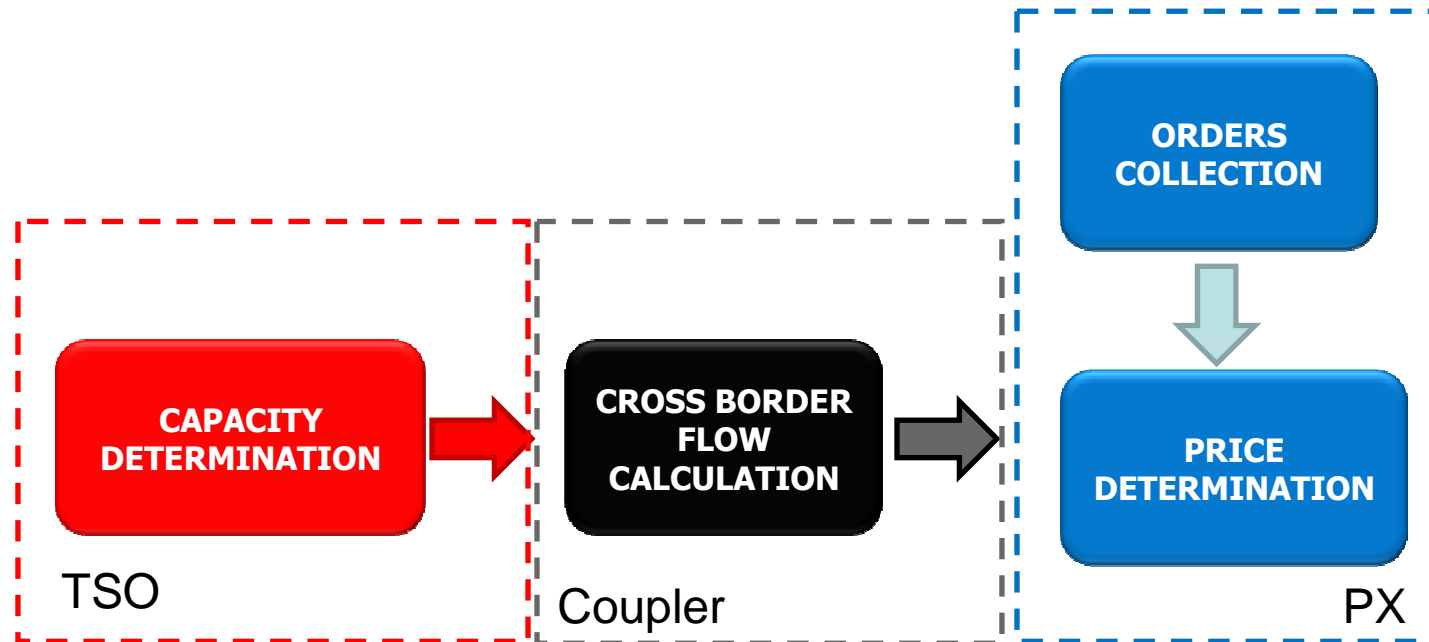
PX and Liquidity

- ▶ An exchange is all the more valuable to its participants when it executes their orders at the best possible prices. This is the case when two linked criteria are met:
 - ▶ The price is calculated in a transparent and accepted manner and results from an equilibrium between supply and demand
 - ▶ The quantities displayed by sellers and buyers are the highest possible.
- ▶ The quality of the prices increases with growing liquidity
 - ▶ The higher the trading volume and the number of active participants are, the better the price represents the current market situation
 - ▶ Liquidity is a key asset of any exchange
 - ▶ Liquidity allows a PX to establish an equilibrium between supply and demand in (almost) any scenario and to produce a so-called reference price

TSO Functions in the Power Market

- ▶ According to the European Directive of 13/07/09, the functions of a TSO consist of:
 - ▶ Operating the high-voltage transportation grid, which overarching purpose is to maintain the balance between injection and withdrawal over the grid
 - ▶ If necessary, developing the grid
 - ▶ Maintaining the long-term ability of the grid to supply power
 - ▶ Managing and improving the interconnections with other systems
- ▶ One of the main purposes of this directive consists in ensuring total separation between the interests as grid operator from the interests linked to generation and supply (unbundling)
 - ▶ One should note that TSOs usually resort to the market either via bilateral exchange or organized markets to source their losses or to sell/purchase power for other purposes (for example, the EEG in Germany)

PX&TSOs in Volume Coupling: Clear Unbundling... But Poor Technical Solution!



PX&TSOs in a PCR Type of Price Coupling: Clear Unbundling



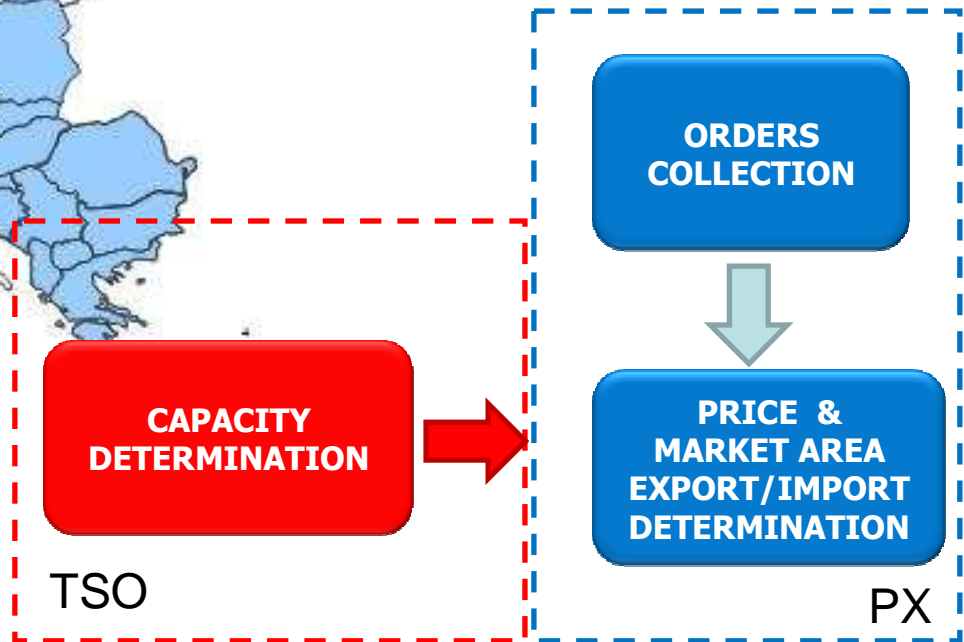
Cooperation of Power Exchanges on European Price Coupling Concept

- NPS, EPEX and OMEL markets on which concept is currently being simulated (approx. 1880 TWh/year*)
- Additional markets on which concept could be first implemented considering existing official projects (increases volume to approx 2880 TWh/year*), i.e. for example CWE Price Coupling, Nordic-Baltic, etc.
- Markets that could join next as part of an agreed European roadmap

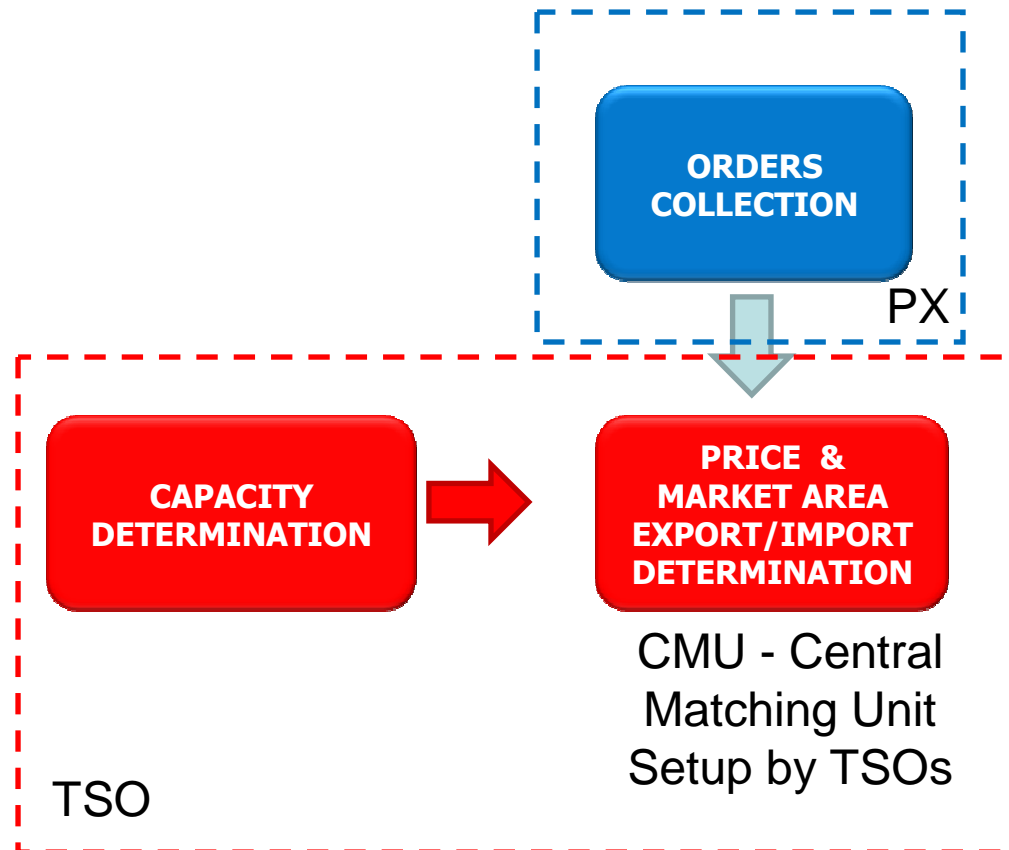
*Source: UCTE 2007 power consumption data



Implemented in Nordic, TLC, MIBEL (and on CWE in a few months)



Why is EuroPEX Unable to Support the CMU Based Price Coupling Concept Suggested by a Few TSOs?



How Does PCR Address Price Coupling?

- ▶ **PXs would continue to be responsible for setting the power prices** in a PCR solution with the same level of operational efficiency and diligence as they have been offering to their customers over the past 10 years
- ▶ PCR would provide a **timely and fully-optimised** solution of price formation and CB capacity allocation, with one algorithm determining all prices and volumes for all the PCR areas.
- ▶ In order to ensure reliability of price formation and availability of power prices in every market area even in the most stressed operational conditions, the PXs in Europe have the unanimous view that an important degree **decentralization** is necessary.
 - ▶ Such decentralization is also **pragmatic** considering the important level of consolidation and trading system cooperation reached by regional PXs
- ▶ **PXs wish to engage more closely with TSOs and regulators** to ensure that the approach meets both TSO/regulators and PX requirements in a true partnership spirit

How are Capacities allocated through PXs in PCR?

- ▶ The way PCR answers this question is again decentralization.
- ▶ There is no prerequisite in PCR to reshuffle the existing ways of allocating transmission capacities through the PXs across Europe.
- ▶ In some regions, TSOs would continue to enter into voluntary commercial contracts with PXs (of course compliant with regulations applicable on the one hand to TSOs and on the other hand to PXs) for PXs to act as intermediaries between TSOs and market participants in implicit auctions
- ▶ In other regions, the laws could dictate such principle.

How is PCR Open to New Entrants?

- ▶ Provided some commercial arrangements as referred below, a PX operating in a market area where an existing PCR PX partner is already active is possible. PCR anticipates equal rights but several levels of responsibility for the PXs being part of the initiative:
 - ▶ “Hosted PX”, using the trading system of an existing regional PX;
 - ▶ “Serviced PX”, using its own trading system but only using the Market coupling algorithm in decoupling cases;
 - ▶ “Performing PX” using its own trading system as well as the Market coupling algorithm as the master PX whose calculation would be the European reference on a previously defined day or as a hot back-up of the other Performing PXs.
- ▶ Some also argue that PXs taking part in a solution such as PCR could never be replaced if regulators or transmission capacity providers or energy market participants would no longer be satisfied with the quality of the services provided by the exchange.
 - ▶ In such a situation, nothing prevents market participants and TSOs in a particular region to set up another PX and decide under regulatory supervision to allocate the capacity through the newly establish PX.

Price Coupling of Regions (PCR) – First Feedbacks

Conclusions, XVII European Electricity Regulatory Forum, 10-11 Dec. 2009

10. The Forum took note of the Europex presentation of a decentralised multi-regional price coupling concept. The objective is to quickly deliver a price coupling solution covering the Nordic, Central West and Southern regions, i.e. more than 75% of total European electricity consumption.

APX-Endex, Belpex and GME are in the final stage of discussions to join the initiative soon

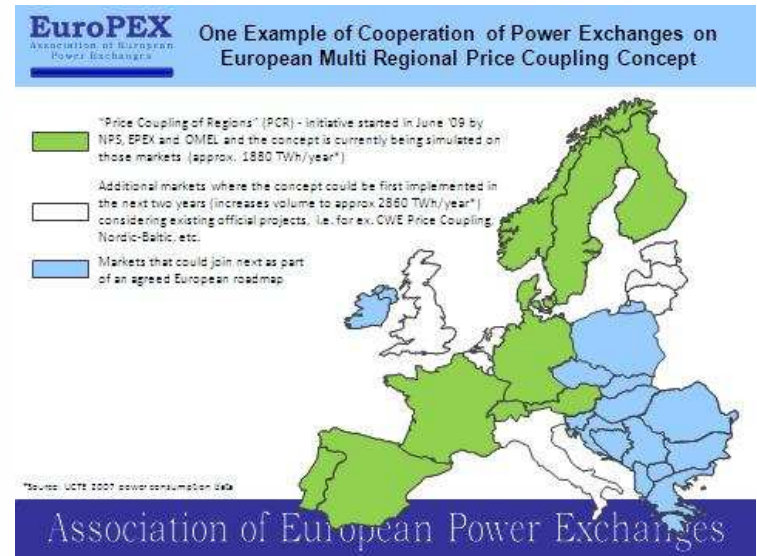
EuroPEX is supporting MultiRegional Decentralised Price Coupling

ERGEG ERI and SWE Regulators Press Release, 7 Dec. 2009



Press Release

Regulators of the ERGEG South West region welcome the power exchanges' proposal to Price Couple three of Europe's electricity regions and ask for a strong and urgent mobilisation of all involved stakeholders of the three regions



How Does the CMU Address Price Coupling?

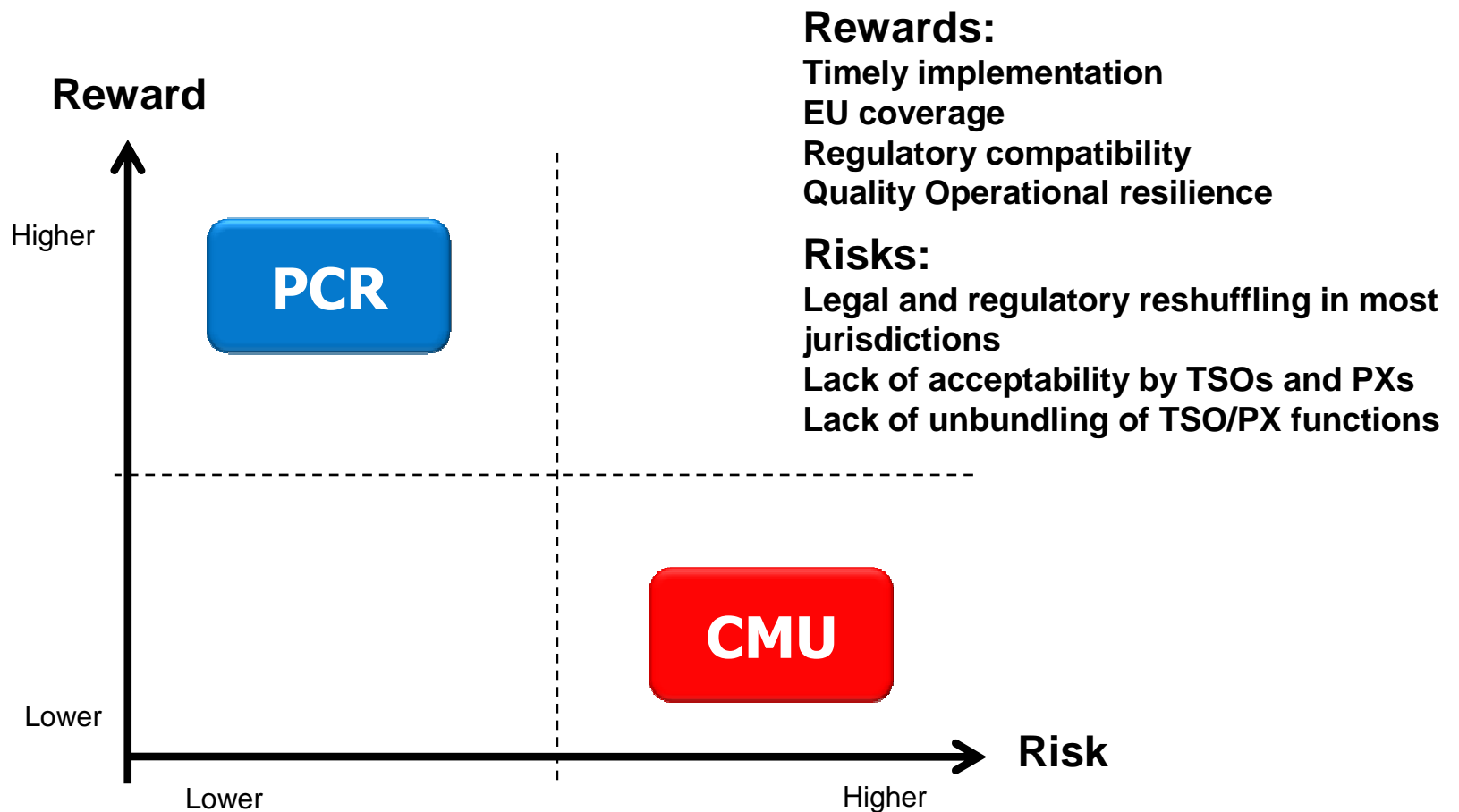
- ▶ Some TSOs have recently argued for a centralized matching in Europe, based on the order books data of the different market areas – to be delivered by PXs – and the respective cross-border transmission capacity data – to be delivered by TSOs
- ▶ A separate entity, the Central Matching Unit (CMU), would both calculate the optimal utilization of cross-border capacity and determine the prices of the market areas
- ▶ In this approach the CMU would be a “monopoly public service”, controlled by TSOs
- ▶ The CMU would be designed by TSOs. The CMU solution (governance, IT, financing....) would be selected by and procured by a “TSO company”. The TSO-PX relationship is thus no longer considered as a win-win partnership although it has proven to be a key success factor in most existing market coupling projects and initiatives

Some of the Issues Raised by the CMU

- ▶ Price formation is critical for the realization of the IEM.
 - ▶ Why such a reshuffling process running the risk of instability in the price setting through IEM?
 - ▶ Why do reshuffle something which works and which has proven adaptable enough to fulfill new needs in an effective way?
- ▶ What is the legitimacy of the CMU to requisition liquidity from the PXs and how will the PXs be compensated for their past investments?
- ▶ What are the status of the CMU and its responsibility vis-à-vis the PXs and the participants?
- ▶ How will the access to this facility be governed and how will the PXs and market models across Europe be timely harmonized to comply with these rules?
- ▶ How can the CMU be readily implemented and extended to countries where one PX has a legal monopoly to set prices?

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Risk/Reward Profiles



What's Next?

**PXs do not need to prove again that they can technically deliver PCR
PXs need now to propose a PCR Governance Solution**

- ▶ Step 1: **Define** a governance framework
 1. define the scope of the price coupling assets and operations to be controlled and whether they should be controlled at EU level or at regional level (subsidiarity and diversity)
 2. define the party or set of parties (PX-TSO-Regulator) controlling them either individually or collectively
 3. define the decision making process

- ▶ Step 2: Set-up the most efficient solution to **implement** the governance framework
 - ▶ i.e. EU law/regulation, agreements, bodies...